FIG. 1

```
  1  CTTTCAGTCAGCATGATAGAAACATACAGCCAACCTTCCCCCAGATCCGTGGCAACTGGACTTCCAGCG   69
  1                      MetIleGluThrTyrSerGlnProSerProArgSerValAlaThrGlyLeuProAla   19

 70  AGCATGAAGATTTTTATGTATTTACTTACTGTTTTCCTTATCACCCAAATGATTGGATCTGTGCTTTTT  138
 20  SerMetLysIlePheMetTyrLeuLeuThrValPheLeuIleThrGlnMetIleGlySerValLeuPhe   42

139  GCTGTGTATCTTCATAGAAGATTGGATAAGGTCGAAGAGGAAGTAAACCTTCATGAAGATTTTGTATTC  207
 43  AlaValTyrLeuHisArgArgLeuAspLysValGluGluGluValAsnLeuHisGluAspPheValPhe   65

208  ATAAAAAAGCTAAAGAGATGCAACAAAGGAGAAGGATCTTTATCCTTGCTGAACTGTGAGGAGATGAGA  276
 66  IleLysLysLeuLysArgCysAsnLysGlyGluGlySerLeuSerLeuLeuAsnCysGluGluMetArg   88

277  AGGCAATTTGAAGACCTTGTCAAGGATATAACGTTAAACAAAGAAGAGAAAAAAGAAAACAGCTTTGAA  345
 89  ArgGlnPheGluAspLeuValLysAspIleThrLeuAsnLysGluGluLysLysGluAsnSerPheGlu  111

346  ATGCAAAGAGGTGATGAGGATCCTCAAATTGCAGCACACGTTGTAAGCGAAGCCAACAGTAATGCAGCA  414
112  MetGlnArgGlyAspGluAspProGlnIleAlaAlaHisValValSerGluAlaAsnSerAsnAlaAla  134

415  TCCGTTCTACAGTGGGCCAAGAAAGGATATTATACCATGAAAAGCAACTTGGTAATGCTTGAAAATGGG  483
135  SerValLeuGlnTrpAlaLysLysGlyTyrTyrThrMetLysSerAsnLeuValMetLeuGluAsnGly  157

484  AAACAGCTGACGGTTAAAAGAGAAGGACTCTATTATGTCTACACTCAAGTCACCTTCTGCTCTAATCGG  552
158  LysGlnLeuThrValLysArgGluGlyLeuTyrTyrValTyrThrGlnValThrPheCysSerAsnArg  180

553  GAGCCTTCGAGTCAACGCCCATTCATCGTCGGCCTCTGGCTGAAGCCCAGCAGTGGATCTGAGAGAATC  621
181  GluProSerSerGlnArgProPheIleValGlyLeuTrpLeuLysProSerSerGlySerGluArgIle  203

622  TTACTCAAGGCGGCAAATACCCACAGTTCCTCCCAGCTTTGCGAGCAGCAGTCTGTTCACTTGGGCGGA  690
204  LeuLeuLysAlaAlaAsnThrHisSerSerSerGlnLeuCysGluGlnGlnSerValHisLeuGlyGly  226
```

FIG. 1, continued

```
691   GTGTTTGAATTACAAGCTGGTGCTTCTGTGTTTGTCAACGTGACTGAAGCAAGCCAAGTGATCCACAGA   759
227   ValPheGluLeuGlnAlaGlyAlaSerValPheValAsnValThrGluAlaSerGlnValIleHisArg   249

760   GTTGGCTTCTCATCTTTTGGCTTACTCAAACTCTGAACAGTGCGCTGCCCTAGGCTGCAGCAGGGCTGA   828
250   ValGlyPheSerSerPheGlyLeuLeuLysLeu                                       260

829   TGCTGGCAGTCTCCCCTATACACCAAGTCAGTTAGGCCCTCCCCTGTGTTGAACTGCCTATTTATAACC   897

898   CTAGGATCCTCCTCATGGAGAACTATTTATTATGTACCCCCAAGGCACATAGAGCTGGAATAAGAGAAT   966

967   TACAGGGCAGGCAAAAATCCCAAGGGACCCTGCTCCCTAAGAACTTACAATCTGAAACAGCAACCCCAC  1035

1036  TGATTCAGACAACCAGAAAAGACAAAGCCATAATACACAGATGACAGAGCTCTGATGAAACAACAGATA  1104

1105  ACTAATGAGCACAGTTTTGTTGTTTTATGGGTGTGTCGTTCAATGGACAGTGTACTTGACTTACCAGGG  1173

1174  AAGATGCAGAAGGGCAACTGTGAGCCTCAGCTCACAATCTGTTATGGTTGACCTGGGCTCCCTGCGGCC  1242

1243  CTAGTAGG                                                               1250
```

FIG. 2

```
  1 TGCCACCTTCTCTGCCAGAAGATACCATTTCAACTTTAACACAGCATGATCGAAACATACAACCAAACT  69
  1                                                   MetIleGluThrTyrAsnGlnThr   8

 70 TCTCCCCGATCTGCGGCCACTGGACTGCCCATCAGCATGAAAATTTTTATGTATTTACTTACTGTTTTT 138
  9 SerProArgSerAlaAlaThrGlyLeuProIleSerMetLysIlePheMetTyrLeuLeuThrValPhe  31

139 CTTATCACCCAGATGATTGGGTCAGCACTTTTTGCTGTGTATCTTCATAGAAGGTTGGACAAGATAGAA 207
 32 LeuIleThrGlnMetIleGlySerAlaLeuPheAlaValTyrLeuHisArgArgLeuAspLysIleGlu  54

208 GATGAAAGGAATCTTCATGAAGATTTTGTATTCATGAAAACGATACAGAGATGCAACACAGGAGAAAGA 276
 55 AspGluArgAsnLeuHisGluAspPheValPheMetLysThrIleGlnArgCysAsnThrGlyGluArg  77

277 TCCTTATCCTTACTGAACTGTGAGGAGATTAAAAGCCAGTTTGAAGGCTTTGTGAAGGATATAATGTTA 345
 78 SerLeuSerLeuLeuAsnCysGluGluIleLysSerGlnPheGluGlyPheValLysAspIleMetLeu 100

346 AACAAAGAGGAGACGAAGAAAGAAAACAGCTTTGAAATGCAAAAAGGTGATCAGAATCCTCAAATTGCG 414
101 AsnLysGluGluThrLysLysGluAsnSerPheGluMetGlnLysGlyAspGlnAsnProGlnIleAla 123

415 GCACATGTCATAAGTGAGGCCAGCAGTAAAACAACATCTGTGTTACAGTGGGCTGAAAAAGGATACTAC 483
124 AlaHisValIleSerGluAlaSerSerLysThrThrSerValLeuGlnTrpAlaGluLysGlyTyrTyr 146

484 ACCATGAGCAACAACTTGGTAACCCTGGAAAATGGGAAACAGCTGACCGTTAAAAGACAAGGACTCTAT 552
147 ThrMetSerAsnAsnLeuValThrLeuGluAsnGlyLysGlnLeuThrValLysArgGlnGlyLeuTyr 169

553 TATATCTATGCCCAAGTCACCTTCTGTTCCAATCGGGAAGCTTCGAGTCAAGCTCCATTTATAGCCAGC 621
170 TyrIleTyrAlaGlnValThrPheCysSerAsnArgGluAlaSerSerGlnAlaProPheIleAlaSer 192

622 CTCTGCCTAAAGTCCCCCGGTAGATTCGAGAGAATCTTACTCAGAGCTGCAAATACCCACAGTTCCGCC 690
193 LeuCysLeuLysSerProGlyArgPheGluArgIleLeuLeuArgAlaAlaAsnThrHisSerSerAla 215
```

FIG. 2, continued

```
691  AAACCTTGCGGGCAACAATCCATTCACTTGGGAGGAGTATTTGAATTGCAACCAGGTGCTTCGGTGTTT  759
216  LysProCysGlyGlnGlnSerIleHisLeuGlyGlyValPheGluLeuGlnProGlyAlaSerValPhe  238

760  GTCAATGTGACTGATCCAAGCCAAGTGAGCCATGGCACTGGCTTCACGTCCTTTGGCTTACTCAAACTC  828
239  ValAsnValThrAspProSerGlnValSerHisGlyThrGlyPheThrSerPheGlyLeuLeuLysLeu  261

829  TGAACAGTGTCACCTTGCAGGCTGTGGTGGAGCTGACGCTGGGAGTCTTCATAATACAGCACAGCGGTT  897

898  AAGCCCACCCCCTGTTAACTGCCTATTTATAACCCTAGGATCCTCCTTATGGAGAACTATTTAT      961
```

FIG. 3

```
  1 MIETYNQTSPRSAATGLPISMKIFMYLLTVFLITQMIGSALFAVYLHRRL  50
    |||||.|.||||.||||| ||||||||||||||||||||.||||||||||
  5 MIETYSQPSPRSVATGLPASMKIFMYLLTVFLITQMIGSVLFAVYLHRRL  54

 51 DKIEDERNLHEDFVFMKTIQRCNTGERSLSLLNCEEIKSQFEGFVKDIML 100
    ||:|:| ||||||||:|.:.|||.|| |||||||||::.|||::|||| |
 55 DKVEEEVNLHEDFVFIKKLKRCNKGEGSLSLLNCEEMRRQFEDLVKDITL 104

101 NKEETKKENSFEMQKGDQNPQIAAHVISEASSKTTSVLQWAEKGYYTMSN 150
    |||| |||||||||:||::|||||||:|||.|...||||||.||||||..
105 NKEE.KKENSFEMQRGDEDPQIAAHVVSEANSNAASVLQWAKKGYYTMKS 153

151 NLVTLENGKQLTVKRQGLYYIYAQVTFCSNREASSQAPFIASLCLKSPGR 200
    ||| |||||||||||:||||:|.|||||||||:||| |||.:| ||..
154 NLVMLENGKQLTVKREGLYYVYTQVTFCSNREPSSQRPFIVGLWLKPSSG 203

201 FERILLRAANTHSSAKPCGQQSIHLGGVFELQPGASVFVNVTDPSQVSHG 250
     |||||:|||||||.. |:|||:|||||||||:|||||||||::||| |
204 SERILLKAANTHSSSQLCEQQSVHLGGVFELQAGASVFVNVTEASQVIHR 253

251 TGFTSFGLLKL 261
    .||.|||||||
254 VGFSSFGLLKL 264
```

FIG. 4A

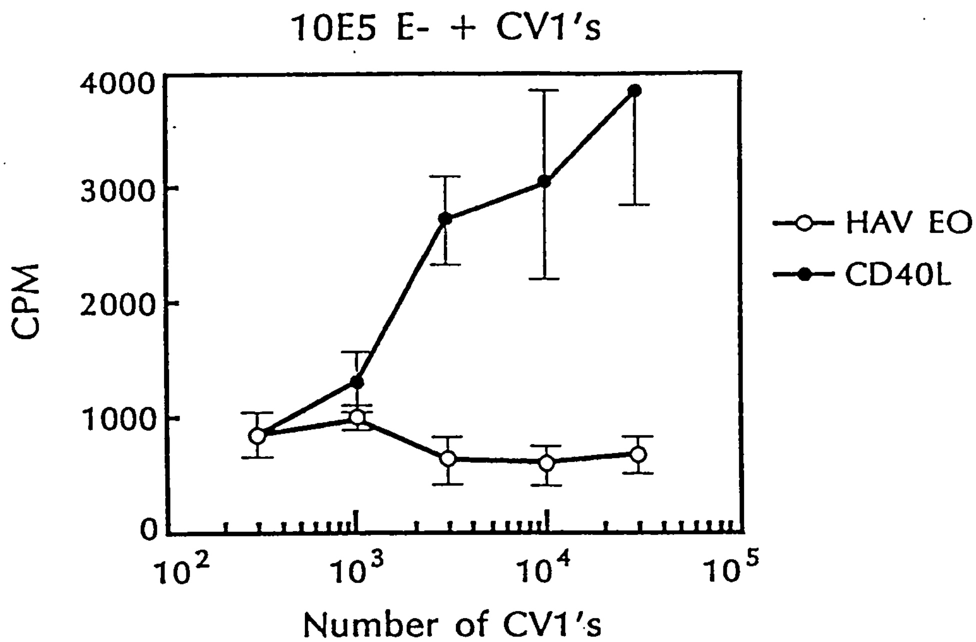

10E5 E- + CV1's
4000
3000
2000
1000
0
CPM
10^2
10^3
10^4
10^5
Number of CV1's
HAV EO
CD40L

FIG. 4B

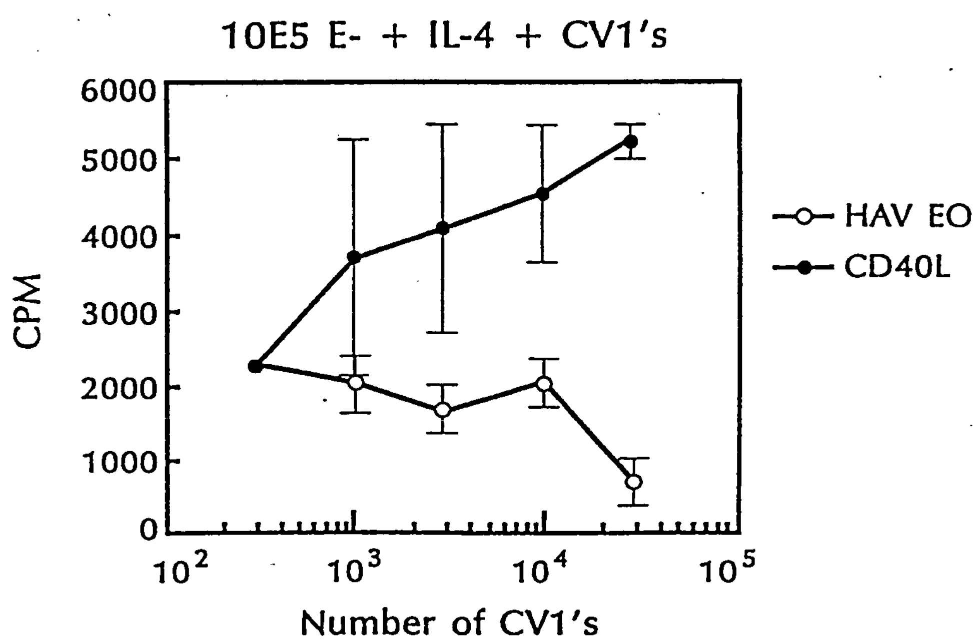
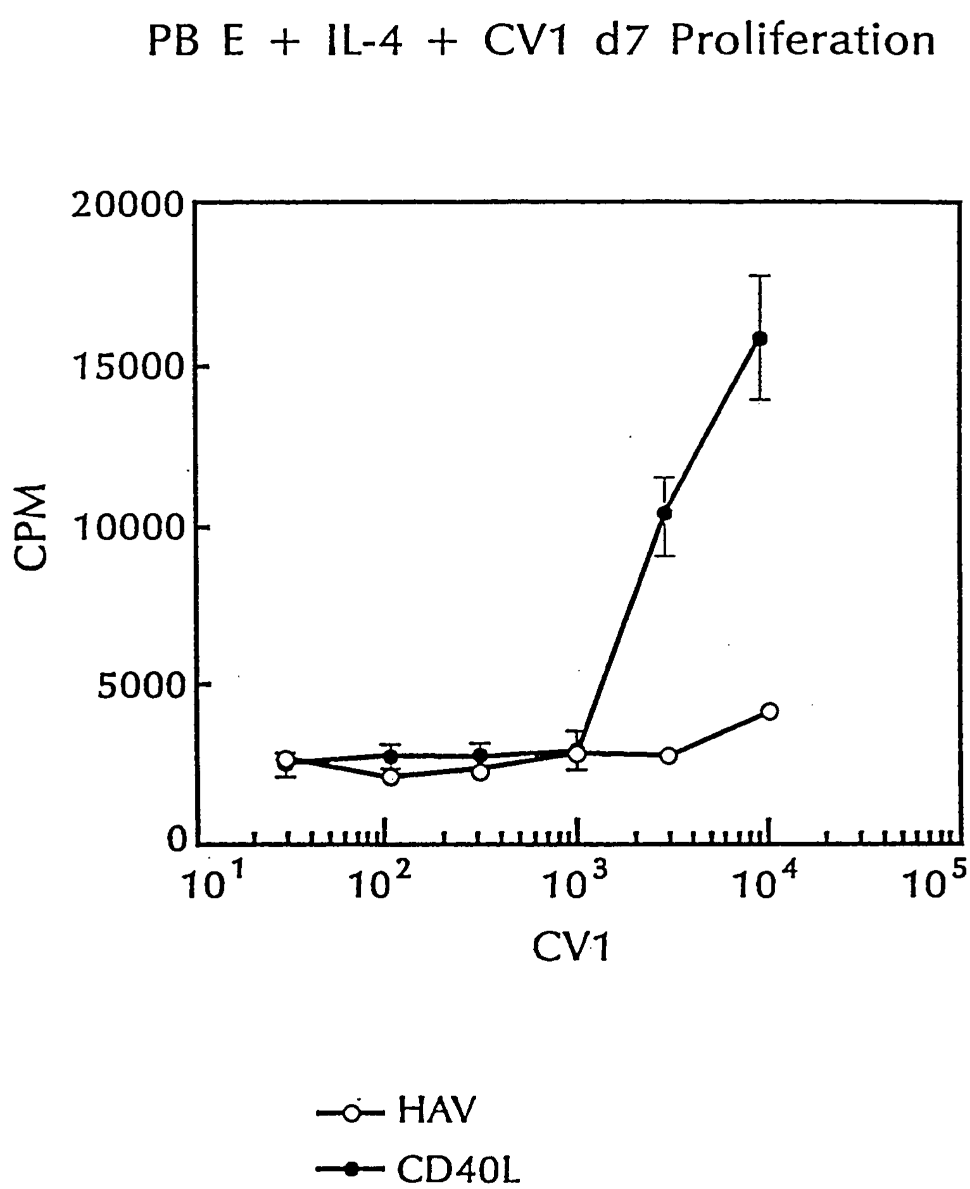

10E5 E- + IL-4 + CV1's
6000
5000
4000
3000
2000
1000
0
CPM
10^2
10^3
10^4
10^5
Number of CV1's
HAV EO
CD40L

FIG. 5



PB E + IL-4 + CV1 d7 Proliferation
20000
15000
10000
5000
0
CPM
10^1
10^2
10^3
10^4
10^5
CV1
HAV
CD40L

FIG. 6

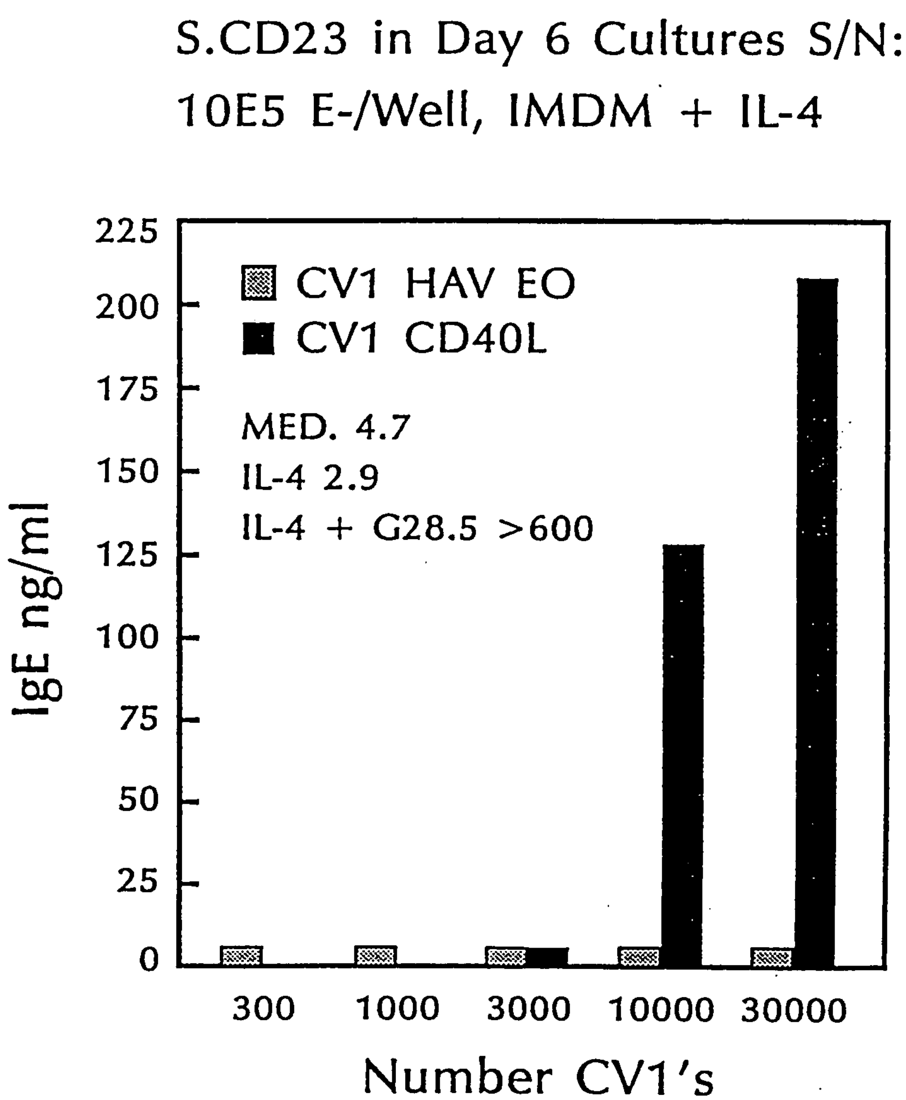

S.CD23 in Day 6 Cultures S/N:
10E5 E-/Well, IMDM + IL-4
CV1 HAV EO
CV1 CD40L
MED. 4.7
IL-4 2.9
IL-4 + G28.5 >600
IgE ng/ml
225
200
175
150
125
100
75
50
25
0
300
1000
3000
10000
30000
Number CV1's

FIG. 7

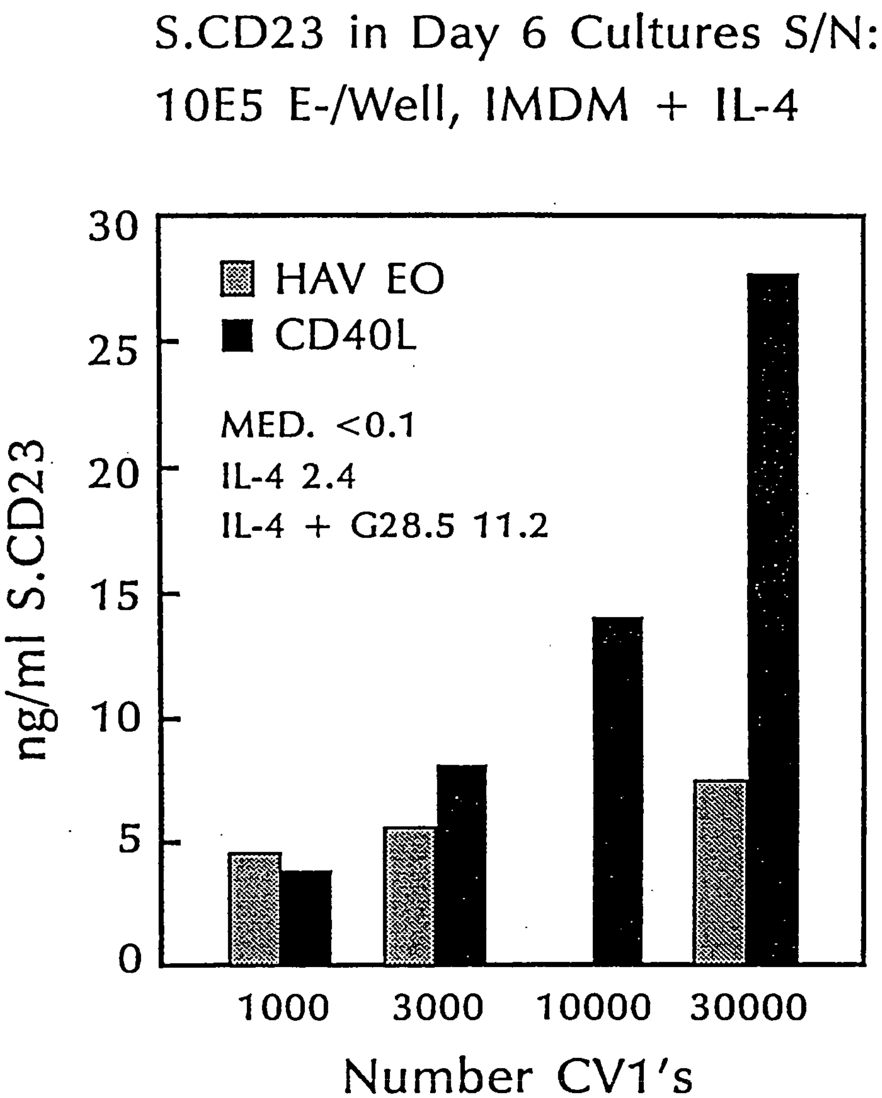

S.CD23 in Day 6 Cultures S/N:
10E5 E-/Well, IMDM + IL-4
HAV EO
CD40L
MED. <0.1
IL-4 2.4
IL-4 + G28.5 11.2
ng/ml S.CD23
30
25
20
15
10
5
0
1000
3000
10000
30000
Number CV1's

FIG. 8

Induction of B Cell Proliferation by
CD40 Ligand Expressing CV-1 Cells (fixed)

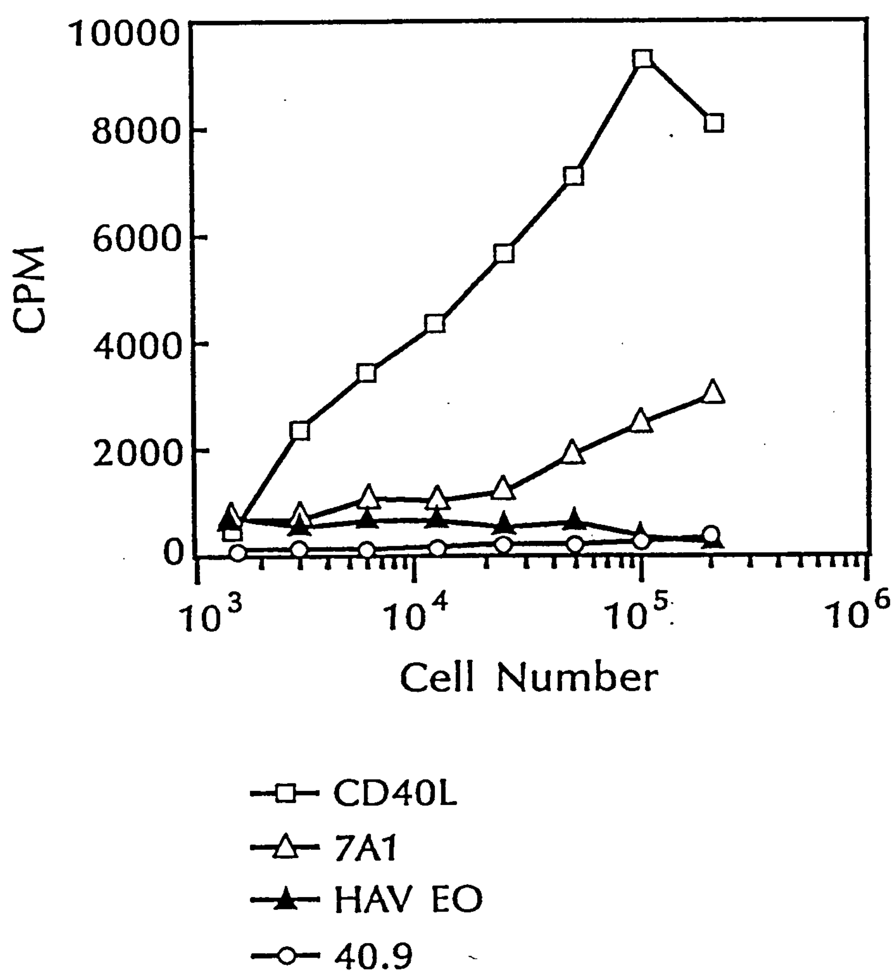


FIG. 9

Induction of Anti-SRBC PFC by EL4 40.9
and 7A1 Th1 Cells (Fixed)

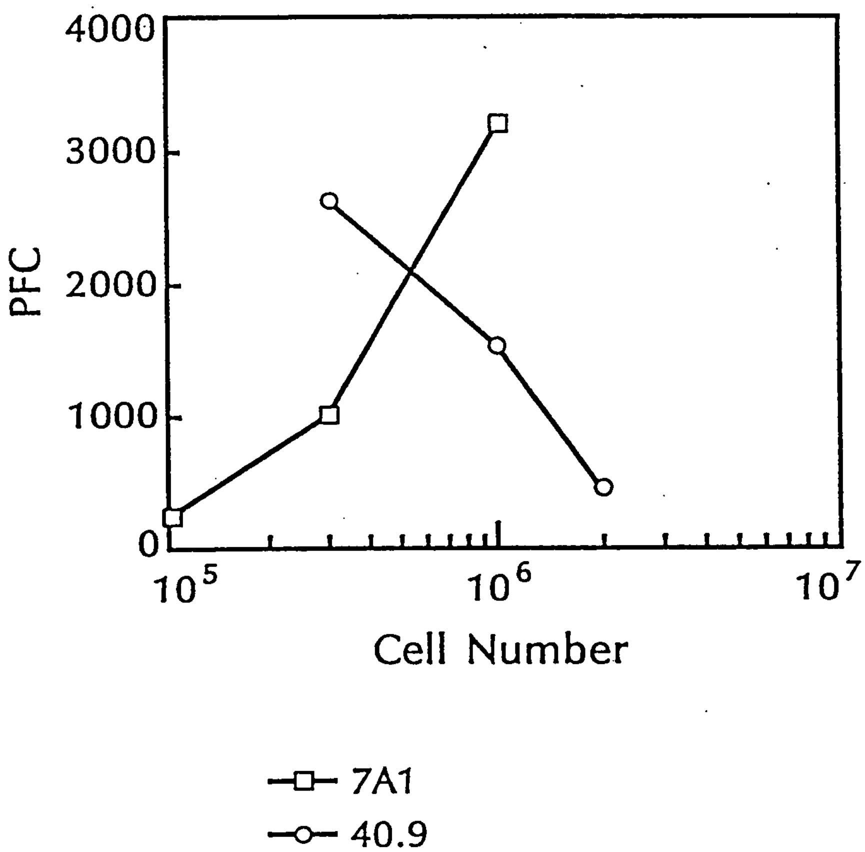


FIG. 10

Induction of B Cell Proliferation by CD40 Ligand Expressing CV-1 Cells

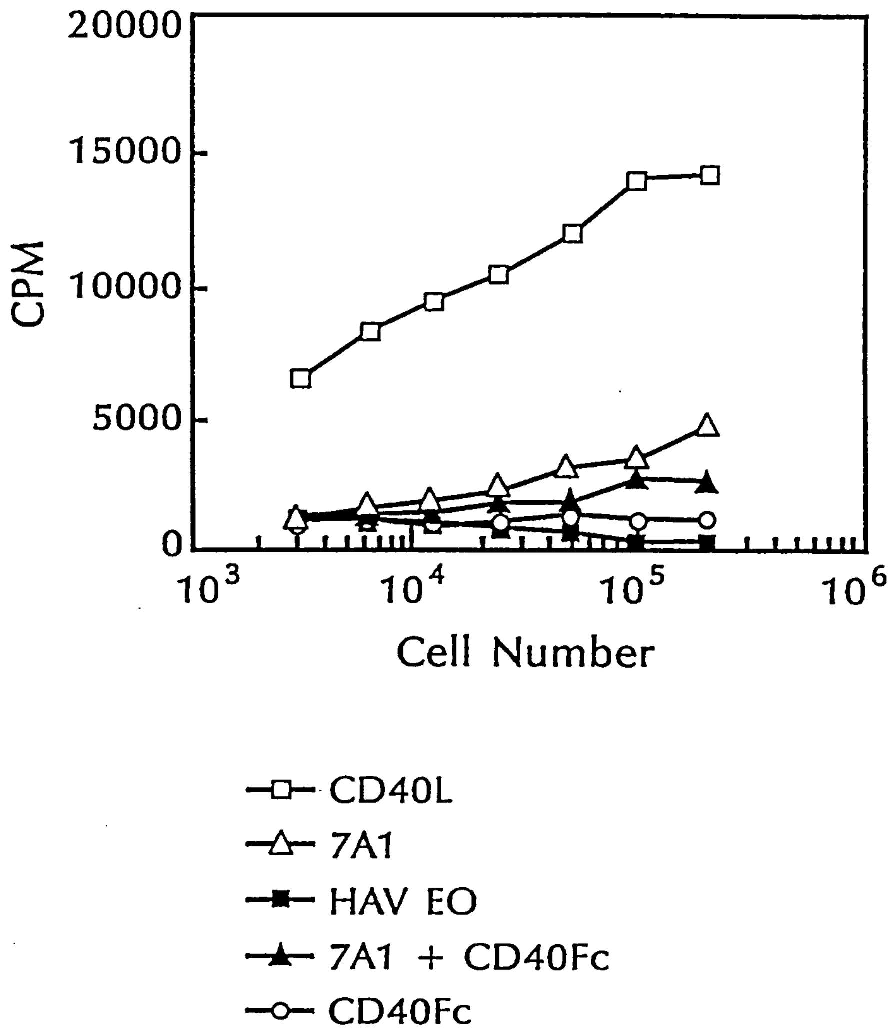
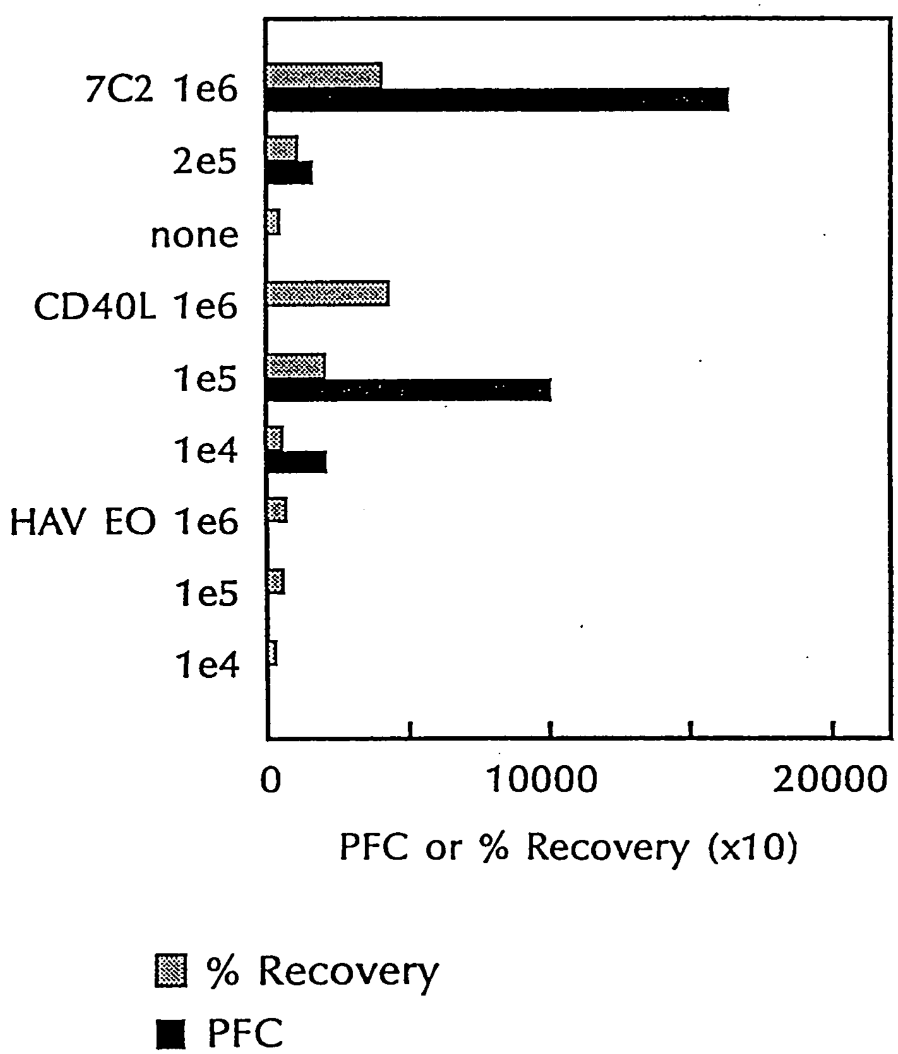


FIG. 11

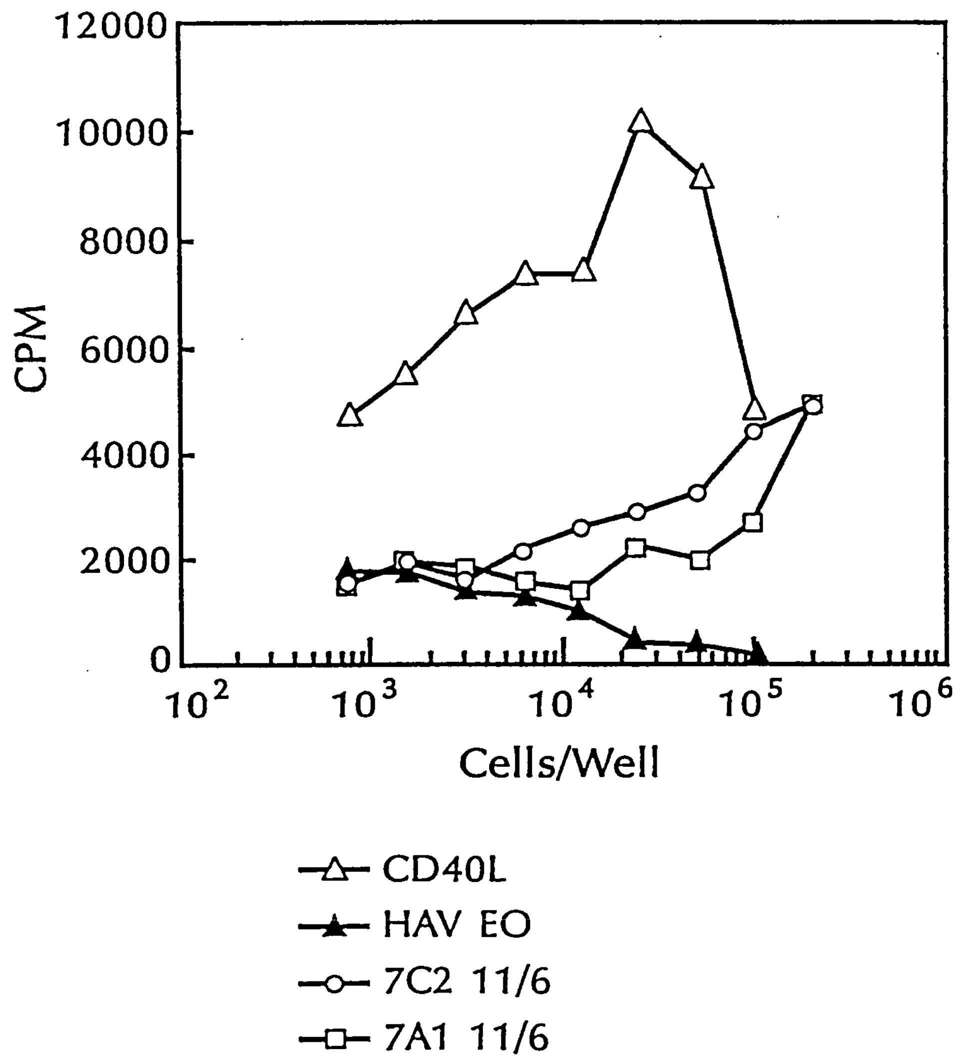
Induction of Anti-SRBC PFC by CD40 Ligand Expressing CV-1 Cells (fixed)



3194-11

FIG. 12

Induction of Murine B Cell Proliferation by CD40 Ligand Expressing CV-1 Cels (fixed)



INDUCTION OF ANTIGEN SPECIFIC PFC BY CD40 LIGAND EXPRESSING CV-1 CELLS (FIXED)

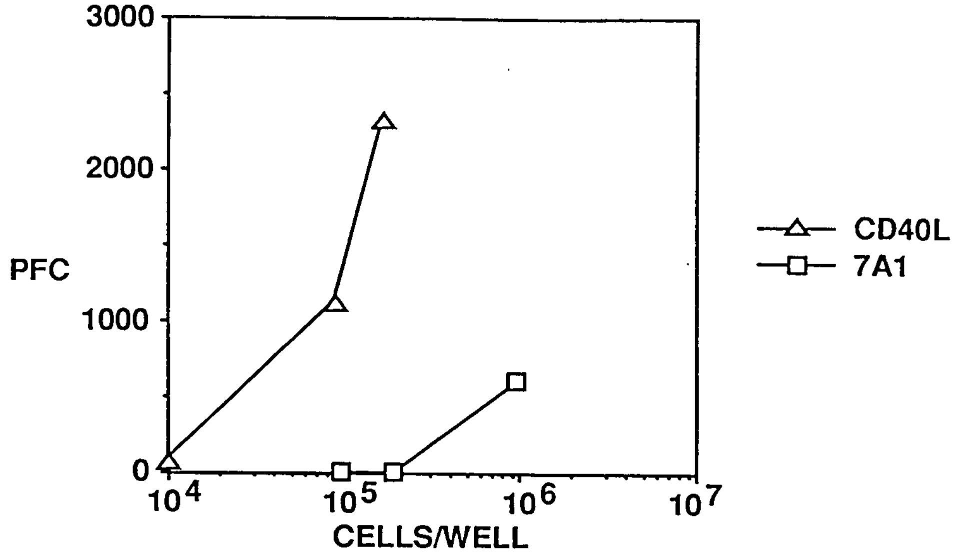


FIG. 13A

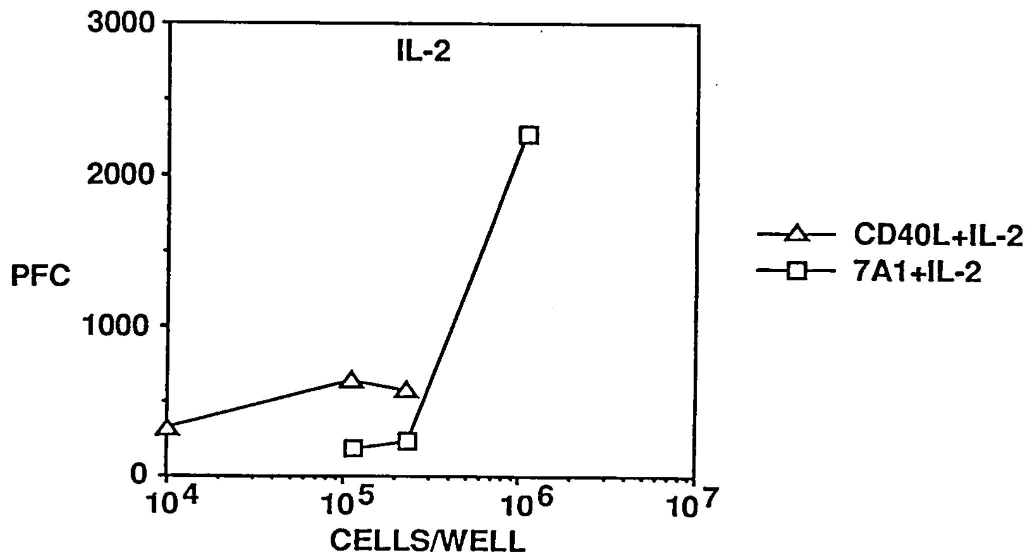


FIG. 13B

FIG. 14A

Day 7 Proliferation of T-depleted PBM

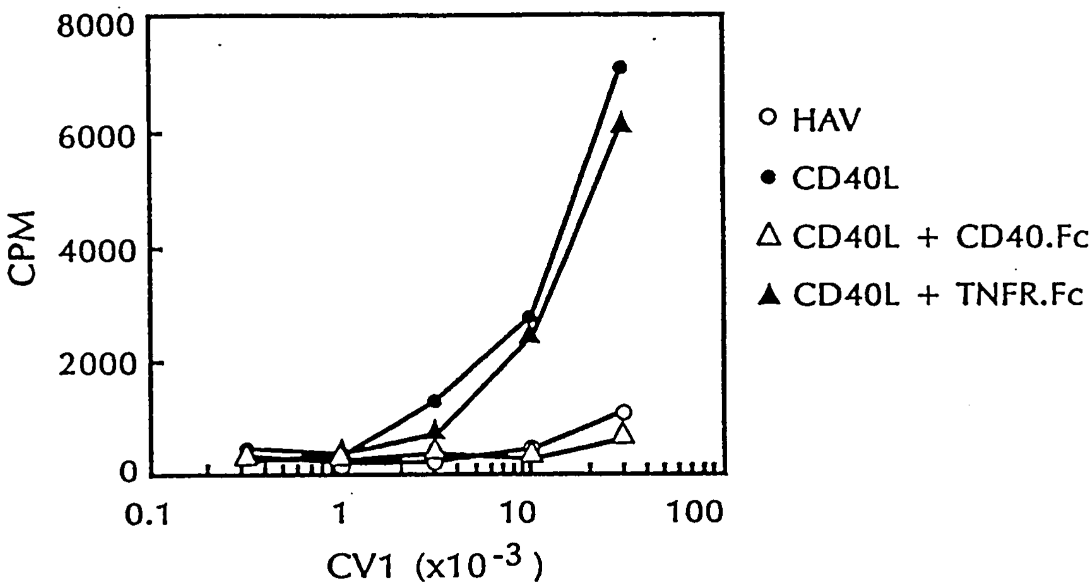


FIG. 14B

Day 10 IgE Secretion from T-depleted PBM

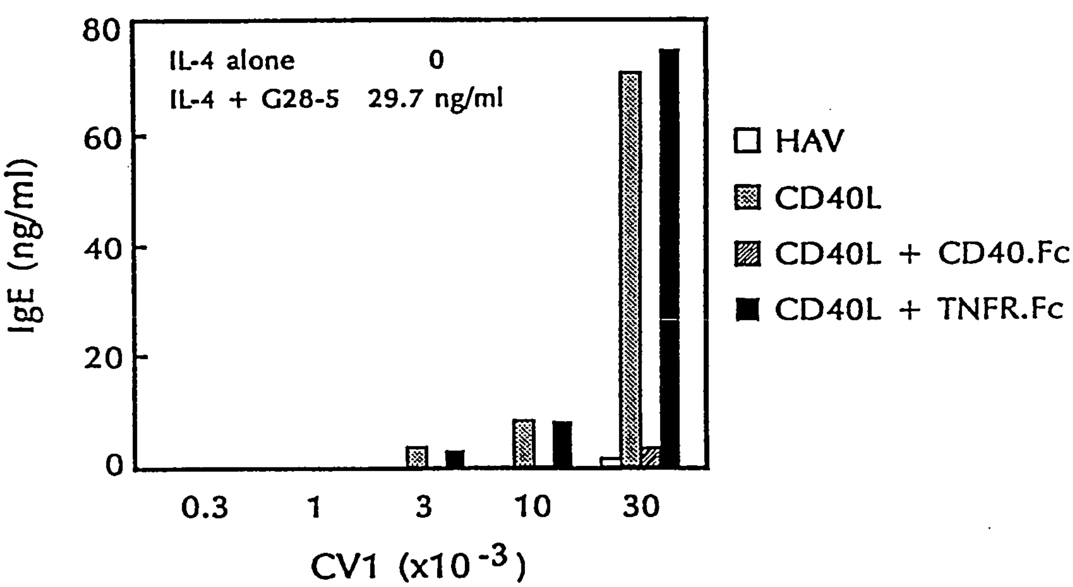


FIG. 15A

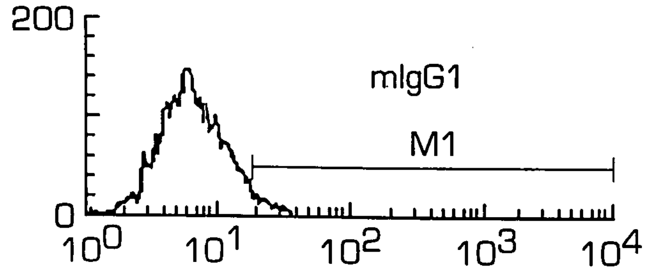


FIG. 15B

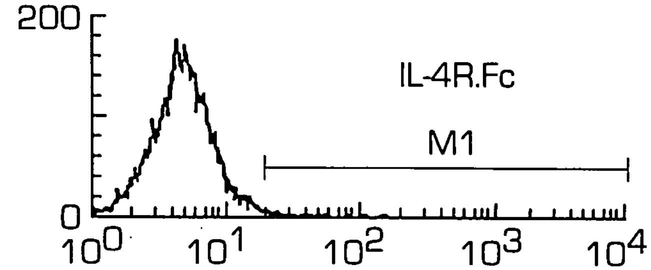


FIG. 15C

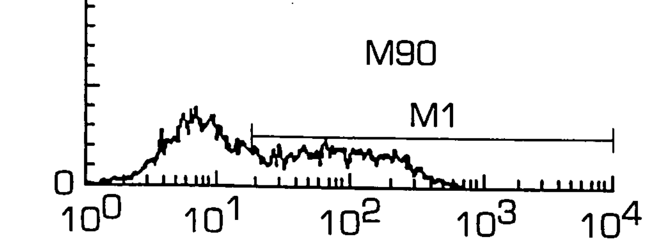
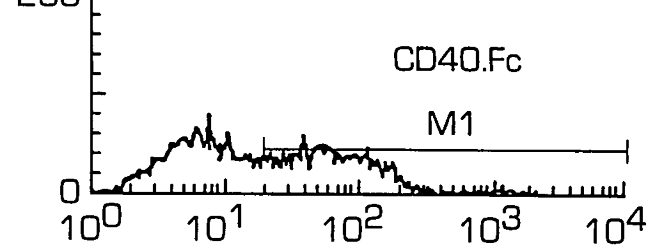


FIG. 15D



BINDING OF CD40.Fc AND ANTI-CD40L ANTIBODY M90
TO ACTIVATED PERIPHERAL BLOOD T CELLS

FIG. 16A

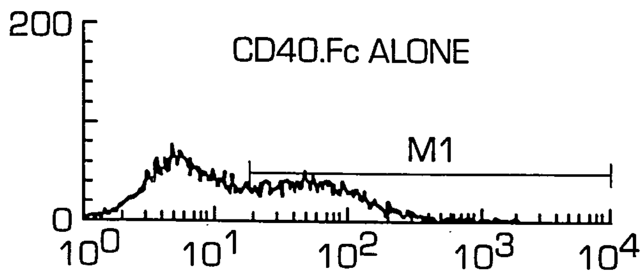


FIG. 16B

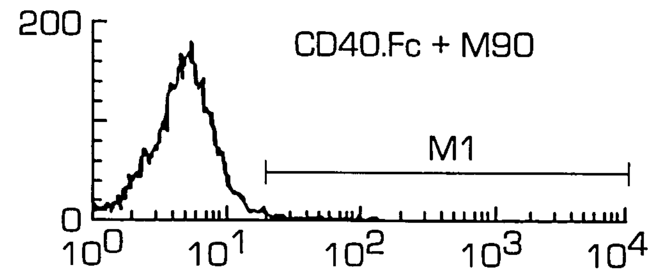


FIG. 16C

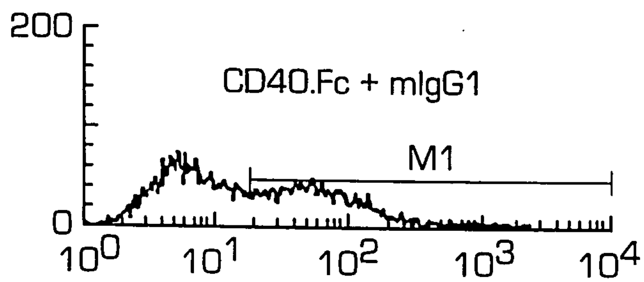
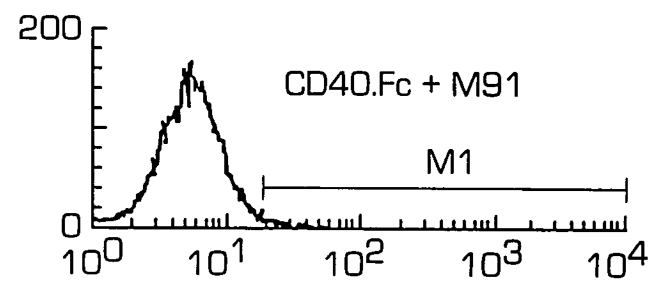


FIG. 16D



INHIBITON OF CD40.Fc BINDING TO ACTIVATED PERIPHERAL BLOOD T CELLS
BY ANTI-CD40L ANTIBODIES M90 AND M91

Inhibition of anti-IgM + soluble CD40L-induced B-cell proliferation by anti-hCD40L mAb

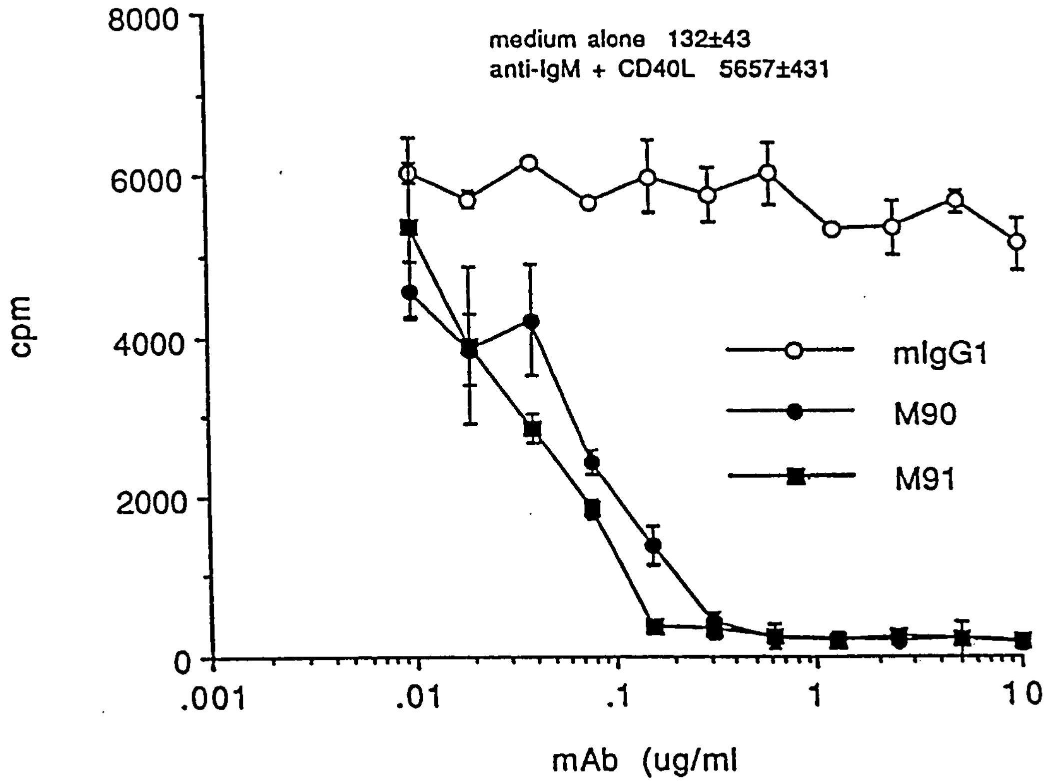


FIG. 17

Binding of human and Murine CD40 LT and CD40 L Fc
Dimer to CD40Fc by Biosensor Assay

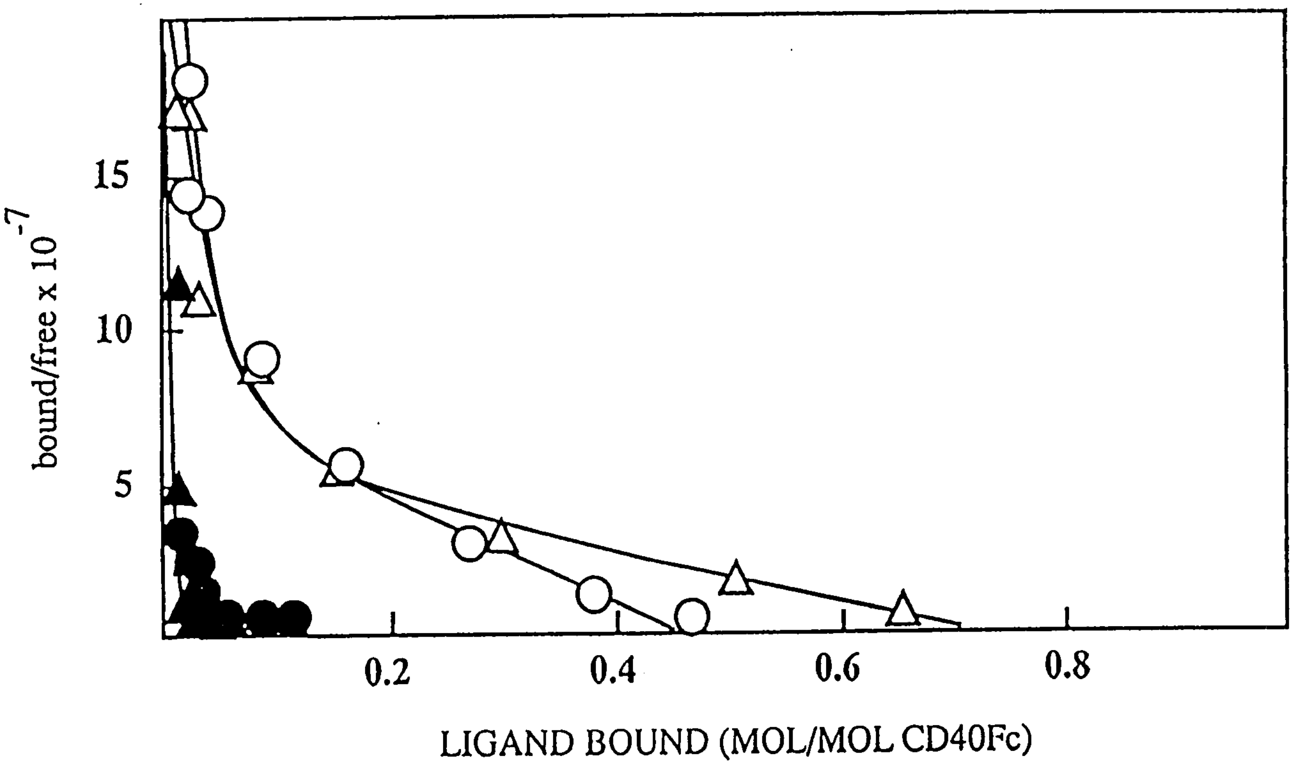


FIG. 18

FIG. 19A

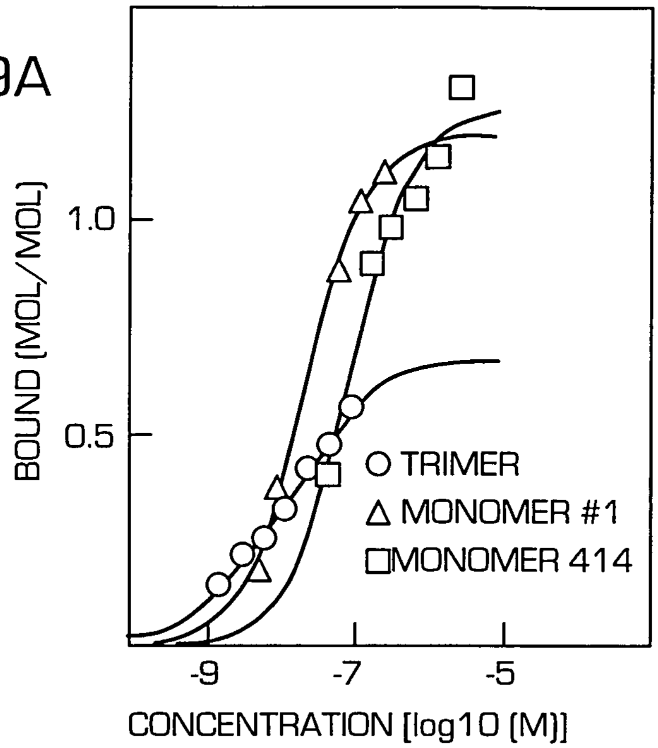
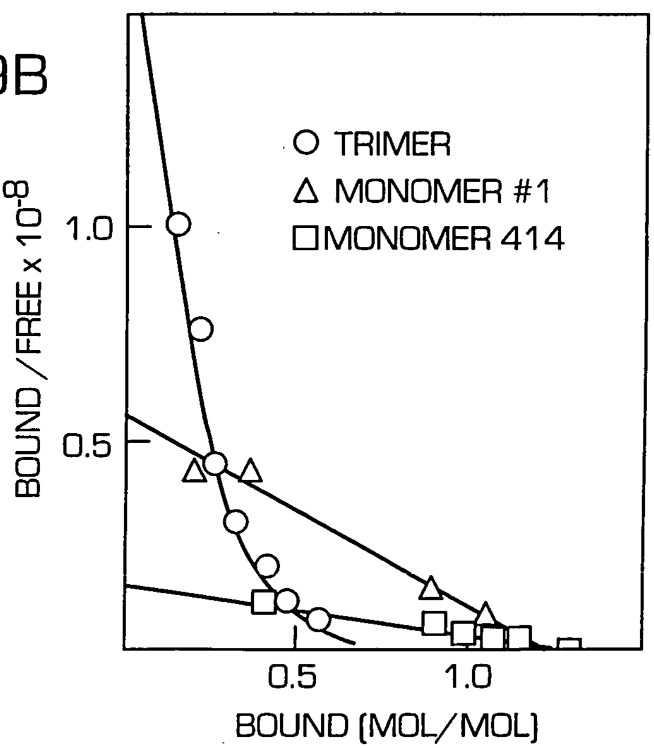


FIG. 19B



BINDING OF CD40 LIGANDS TO CD40Fc USING EQUILIBRIUM BINDING VALUES ESTIMATED FROM A KINETIC ANALYSIS OF THE ASSOCIATION PHASE